

SEQUENCE LISTING

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 Kroger, Burkhard
 Schroder, Hartwig
 Zelder, Oskar
 Haberhauer, Gregor
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 Pro Ser Leu Val Asn Gly Tyr Asp Val Ala Ala Thr Met Ala Ala Gly
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 Glu Met Pro Met Trp Ser Leu Phe Gly Leu Asp Val Ala Gln Ala Gly
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 Tyr Gln Gly Thr Val Leu Pro Val Leu Val Val Ser Trp Ile Leu Ala
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 Thr Ile Glu Lys Phe Leu His Lys Arg Leu Lys Gly Thr Ala Asp Phe
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2025

355

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Lys Ala Gly Glu Leu Leu Cys Glu Phe Asp Ile Asp Ala Ile Lys Ala
410 415 420

Ala Gly Tyr Glu Val Thr Thr Pro Ile Val Val Ser Asn Tyr Lys Lys
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Thr Gly Pro Val Asn Thr Tyr Gly Leu Gly Glu Ile Glu Ala Gly Ala
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<213> Corynebacterium glutamicum

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65 70 75 80

THE CHURCH

Gly Phe Leu Thr Phe Ile Ala Ile Gly Pro Ala Met Arg Trp Val Gly
 85 90 95
 Asp Val Leu Ala His Gly Leu Gln Gly Leu Tyr Asp Phe Gly Gly Pro
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 Lys Gly Leu Ala Gly Ala Ser Gly Val Ser Ala Val Leu Gly Ile Thr
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 Glu Pro Ala Ile Phe Gly Val Asn Leu Arg Leu Arg Trp Pro Phe Phe
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 Ile Gly Ile Gly Thr Ala Ala Ile Gly Gly Ala Leu Ile Ala Leu Phe
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03604431 000000

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<213> Corynebacterium glutamicum

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Pro 65	His	Cys	Arg	Ser	Glu 70	Ala	Val	Ser	Val	Pro 75	Thr	Leu	Gly	Phe	Ala 80
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Lys	Ala 130	Leu	Gln	Glu	Ala	Thr 135	Thr	Glu	Gln	Glu	Ile 140	Val	Asp	Val	Val
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Pro	Ala	Ala	Ala 165	Ala	Val	Ala	Glu	Ser	Gly 170	Ala	Ala	Ser	Thr	Ser 175	Val
Thr	Arg	Ile	Val 180	Ala	Ile	Thr	Ala	Cys 185	Pro	Thr	Gly	Ile	Ala 190	His	Thr
Tyr	Met 195	Ala	Ala	Asp	Ser	Leu	Thr 200	Gln	Asn	Ala	Glu	Gly 205	Arg	Asp	Asp
Val	Glu 210	Leu	Val	Val	Glu	Thr 215	Gln	Gly	Ser	Ser	Ala 220	Val	Thr	Pro	Val
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Ala	Ile	Ala 275	Ala	Ser	Lys	Asn	Pro 280	Asn	Ala	Arg	Lys	Val 285	Ser	Gly	Ser
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$\frac{d}{dt} \left(\frac{\partial L}{\partial \dot{x}} \right) = \frac{\partial L}{\partial x}$

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Ala	Leu	Ser	Ile	Ala	Thr	Leu	Leu	Arg	Lys	Lys	Leu	Phe	Thr	Pro	Ala		
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cca	gca	atg	atg	gct	ggc	ggg	gca	acc	act	ggg	gca	atc	tcc	atg	gca		240
Pro	Ala	Met	Met	Ala	Gly	Gly	Ala	Thr	Thr	Gly	Ala	Ile	Ser	Met	Ala		
65					70					75					80		
ctg	ggc	gtc	ggc	tct	cgg	gct	cca	cac	ggc	ggg	atc	ttc	gtg	gtc	tgg		288
Leu	Gly	Val	Gly	Ser	Arg	Ala	Pro	His	Gly	Gly	Ile	Phe	Val	Val	Trp		
				85					90					95			
gca	atc	gaa	cca	tgg	tgg	ggc	tgg	ctc	atc	gca	ctt	gca	gca	ggc	acc		336
Ala	Ile	Glu	Pro	Trp	Trp	Gly	Trp	Leu	Ile	Ala	Leu	Ala	Ala	Gly	Thr		
			100					105					110				
atc	gtg	tcc	acc	atc	gtt	gtc	atc	gca	ctg	aag	cag	ttc	tgg	cca	aac		384
Ile	Val	Ser	Thr	Ile	Val	Val	Ile	Ala	Leu	Lys	Gln	Phe	Trp	Pro	Asn		
			115				120					125					
aag	gcc	gtc	gct	gca	gaa	gtc	gcg	aag	caa	gaa	gca	caa	caa	gca	gct		432
Lys	Ala	Val	Ala	Ala	Glu	Val	Ala	Lys	Gln	Glu	Ala	Gln	Gln	Ala	Ala		
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Val Asn Ala
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464

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<212> PRT
<213> Corynebacterium glutamicum

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35 40 45
Ser Glu Gly Ala Ile Pro Phe Ala Ala Ala Asp Pro Phe Arg Val Ile
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Pro Ala Met Met Ala Gly Gly Ala Thr Thr Gly Ala Ile Ser Met Ala
65 70 75 80
Leu Gly Val Gly Ser Arg Ala Pro His Gly Gly Ile Phe Val Val Trp
85 90 95
Ala Ile Glu Pro Trp Trp Gly Trp Leu Ile Ala Leu Ala Ala Gly Thr
100 105 110
Ile Val Ser Thr Ile Val Val Ile Ala Leu Lys Gln Phe Trp Pro Asn
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Val Asn Ala
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Met Asn Ser Val Asn
1 5
aat tcc tcg ctt gtc cgg ctg gat gtc gat ttc ggc gac tcc acc acg 163

09/04/2009 14:00:00

[illegible]

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	Val Ala Ile	Thr Ala Cys	Pro Thr Gly	Ile Ala His												
	1		5		10											
acc tac atg	gct gcg gat	tcc ctg acg	caa aac gcg	gaa ggc cgc	gat										160	
Thr Tyr Met	Ala Ala Asp	Ser Leu Thr	Gln Asn Ala	Glu Gly Arg	Asp											
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gat gtg gaa	ctc gtt gtg	gag act cag	ggc tct tcc	gct gtc acc	cca										208	
Asp Val Glu	Leu Val Val	Glu Thr Gln	Gly Ser Ser	Ala Val Thr	Pro											
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gtc gat ccg	aag atc atc	gaa gct gcc	gac gcc gtc	atc ttc gcc	acc										256	
Val Asp Pro	Lys Ile Ile	Glu Ala Ala	Asp Ala Val	Ile Phe Ala	Thr											
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gac gtg gga	gtt aaa gac	cgc gag cgt	ttc gct ggc	aag cca gtc	att										304	
Asp Val Gly	Val Lys Asp	Arg Glu Arg	Phe Ala Gly	Lys Pro Val	Ile											
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gaa tcc ggc	gtc aag cgc	gcg atc aat	gag cca gcc	aag atg atc	gac										352	
Glu Ser Gly	Val Lys Arg	Ala Ile Asn	Glu Pro Ala	Lys Met Ile	Asp											
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gag gcc atc	gca gcc tcc	aag aac cca	aac gcc cgc	aag gtt tcc	ggt										400	
Glu Ala Ile	Ala Ala Ser	Lys Asn Pro	Asn Ala Arg	Lys Val Ser	Gly											
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Lys	Asp	Arg	Glu	Arg	Phe	Ala	Gly	Lys	Pro	Val	Ile	Glu	Ser	Gly	Val	
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Ala	Ser	Lys	Asn	Pro	Asn	Ala	Arg	Lys	Val	Ser	Gly	Ser	Gly	Val	Ala	
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Ala	Ser	Ala	Glu	Thr	Thr	Gly	Glu	Lys	Leu	Gly	Trp	Gly	Lys	Arg	Ile	
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Ala	Gly	Gly	Leu	Leu	Leu	Ala	Leu	Gly	Phe	Ala	Phe	Gly	Gly	Tyr	Asp	
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Met	Ala	Asn	Gly	Trp	Gln	Ala	Ile	Ala	Thr	Gln	Phe	Ser	Leu	Thr	Asn	
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											Val	Ala	Thr	Val	Ala		
											1				5		
gat gtg aat caa gac act gta ctg aag ggc acc ggc gtt gtc ggt gga																	163
Asp	Val	Asn	Gln	Asp	Thr	Val	Leu	Lys	Gly	Thr	Gly	Val	Val	Gly	Gly		
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gtc cgt tat gca agc gcg gtg tgg att acc cca cgc ccc gaa cta ccc																	211
Val	Arg	Tyr	Ala	Ser	Ala	Val	Trp	Ile	Thr	Pro	Arg	Pro	Glu	Leu	Pro		
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caa gca ggc gaa gtc gtc gcc gaa gaa aac cgt gaa gca gag cag gag																	259
Gln	Ala	Gly	Glu	Val	Val	Ala	Glu	Glu	Asn	Arg	Glu	Ala	Glu	Gln	Glu		
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cgt ttc gac gcc gct gca gcc aca gtc tct tct cgt ttg ctt gag cgc																	307
Arg	Phe	Asp	Ala	Ala	Ala	Ala	Thr	Val	Ser	Ser	Arg	Leu	Leu	Glu	Arg		
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tcc gaa gct gct gaa gga cca gca gct gag gtg ctt aaa gct act gct																	355
Ser	Glu	Ala	Ala	Glu	Gly	Pro	Ala	Ala	Glu	Val	Leu	Lys	Ala	Thr	Ala		
	70				75				80						85		
ggc atg gtc aat gac cgt ggc tgg cgt aaq gct gtc atc aag ggt gtc																	403

Gly	Met	Val	Asn	Asp 90	Arg	Gly	Trp	Arg	Lys 95	Ala	Val	Ile	Lys	Gly 100	Val	
aag Lys	ggt Gly	ggt Gly	cac His 105	cct Pro	gcg Ala	gaa Glu	tac Tyr	gcc Ala 110	gtg Val	gtt Val	gca Ala	gca Ala	aca Thr 115	acc Thr	aag Lys	451
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aca Thr	gac Asp 135	ttg Leu	cgc Arg	gac Asp	atc Ile	cgc Arg 140	gac Asp	cgc Arg	gtc Val	atc Ile	gca Ala 145	gaa Glu	ctt Leu	cgt Arg	ggc Gly	547
gat Asp 150	gaa Glu	gag Glu	cca Pro	ggt Gly	ctg Leu 155	cca Pro	gct Ala	gtt Val	tcc Ser	gga Gly 160	cag Gln	gtc Val	att Ile	ctc Leu	ttt Phe 165	595
gca Ala	gat Asp	gac Asp	ctc Leu	tcc Ser 170	cca Pro	gca Ala	gac Asp	acc Thr	gcg Ala 175	gca Ala	cta Leu	gac Asp	aca Thr	gat Asp 180	ctc Leu	643
ttt Phe	gtg Val	gga Gly	ctt Leu 185	gtc Val	act Thr	gag Glu	ctg Leu	ggt Gly 190	ggc Gly	cca Pro	acg Thr	agc Ser	cac His 195	acc Thr	gcg Ala	691
atc Ile	atc Ile	gca Ala 200	cgc Arg	cag Gln	ctc Leu	aac Asn	gtg Val 205	cct Pro	tgc Cys	atc Ile	gtc Val	gca Ala 210	tcc Ser	ggc Gly	gcc Ala	739
ggc Gly	atc Ile 215	aag Lys	gac Asp	atc Ile	aag Lys	tcc Ser 220	ggc Gly	gaa Glu	aag Lys	gtg Val	ctt Leu 225	atc Ile	gac Asp	ggc Gly	agc Ser	787
ctc Leu 230	ggc Gly	acc Thr	att Ile	gac Asp	cgc Arg 235	aac Asn	gcg Ala	gac Asp	gaa Glu	gct Ala 240	gaa Glu	gca Ala	acc Thr	aag Lys	ctc Leu 245	835
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cct Pro	gca Ala	caa Gln	acc Thr 265	aag Lys	gac Asp	ggc Gly	tac Tyr	cgc Arg 270	gtt Val	cag Gln	ctg Leu	ttg Leu	gcc Ala 275	aac Asn	gtc Val	931
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atc Ile 1027	ggc Gly 295	ctg Leu	ttc Phe	cgc Arg	acc Thr	gaa Glu 300	ctg Leu	tgc Cys	ttc Phe	ctt Leu	tcc Ser 305	gcc Ala	acc Thr	gaa Glu	gag Glu	
cca Pro 1075	agc Ser	gtt Val	gat Asp	gag Glu	cag Gln 315	gct Ala	gcg Ala	gtc Val	tac Tyr	tca Ser 320	aag Lys	gtg Val	ctt Leu	gaa Glu	gca Ala 325	

Ala Asp Pro Leu Leu Ala Thr Val Leu Thr Gly Leu Gly Val Asn Ser
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Leu Ser Ala Ala Ser Thr Ala Leu Ala Ala Val Gly Ala Lys Leu Ser
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Arg Leu Leu Glu Arg Ser Glu Ala Ala Glu Gly Pro Ala Ala Glu Val
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Leu Lys Ala Thr Ala Gly Met Val Asn Asp Arg Gly Trp Arg Lys Ala
85 90 95

Val Ile Lys Gly Val Lys Gly Gly His Pro Ala Glu Tyr Ala Val Val
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Ala Ala Thr Thr Lys Phe Ile Ser Met Phe Glu Ala Ala Gly Gly Leu
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Ile Ala Glu Arg Thr Thr Asp Leu Arg Asp Ile Arg Asp Arg Val Ile
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Ala Glu Leu Arg Gly Asp Glu Glu Pro Gly Leu Pro Ala Val Ser Gly
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Gln Val Ile Leu Phe Ala Asp Asp Leu Ser Pro Ala Asp Thr Ala Ala
165 170 175

Leu Asp Thr Asp Leu Phe Val Gly Leu Val Thr Glu Leu Gly Gly Pro

THE

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Thr	Ser	His	Thr	Ala	Ile	Ile	Ala	Arg	Gln	Leu	Asn	Val	Pro	Cys	Ile	
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Val	Ala	Ser	Gly	Ala	Gly	Ile	Lys	Asp	Ile	Lys	Ser	Gly	Glu	Lys	Val	
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Leu	Ile	Asp	Gly	Ser	Leu	Gly	Thr	Ile	Asp	Arg	Asn	Ala	Asp	Glu	Ala	
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Glu	Ala	Thr	Lys	Leu	Val	Ser	Glu	Ser	Leu	Glu	Arg	Ala	Ala	Arg	Ile	
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Ala	Glu	Trp	Lys	Gly	Pro	Ala	Gln	Thr	Lys	Asp	Gly	Tyr	Arg	Val	Gln	
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Leu	Leu	Ala	Asn	Val	Gln	Asp	Gly	Asn	Ser	Ala	Gln	Gln	Ala	Ala	Gln	
275							280						285			
Thr	Glu	Ala	Glu	Gly	Ile	Gly	Leu	Phe	Arg	Thr	Glu	Leu	Cys	Phe	Leu	
290							295						300			
Ser	Ala	Thr	Glu	Glu	Pro	Ser	Val	Asp	Glu	Gln	Ala	Ala	Val	Tyr	Ser	
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Lys	Val	Leu	Glu	Ala	Phe	Pro	Glu	Ser	Lys	Val	Val	Val	Arg	Ser	Leu	
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Asp	Ala	Gly	Ser	Asp	Lys	Pro	Val	Pro	Phe	Ala	Ser	Met	Ala	Asp	Glu	
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Met	Asn	Pro	Ala	Leu	Gly	Val	Arg	Gly	Leu	Arg	Ile	Ala	Arg	Gly	Gln	
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Glu	Leu	Gly	Arg	Gly	Asp	Asp	Ala	Pro	Thr	Trp	Val	Met	Ala	Pro	Met	
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Asn	Asp	Leu	Thr	Gln	Tyr	Thr	Met	Ala	Ala	Asp	Arg	Met	Ser	Pro	Glu	
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Leu	Ala	Tyr	Leu	Thr	Asp	Pro	Trp	Gln	Pro	Ala	Val	Leu	Arg	Leu	Ile	
465			470								475		480			
Lys	His	Thr	Cys	Asp	Glu	Gly	Ala	Arg	Phe	Asn	Thr	Pro	Val	Gly	Val	
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<213> Corynebacterium glutamicum

<223> FRXA01244

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Gly Leu Val Thr Glu Leu Gly Gly Pro Thr Ser His Thr Ala Ile Ile

1. The first part of the paper is devoted to a review of the literature on the topic. It starts with a brief overview of the general theory of the firm, followed by a more detailed discussion of the specific issues related to the topic. The second part of the paper presents the empirical evidence on the topic. It starts with a description of the data used in the study, followed by a presentation of the results of the empirical analysis. The third part of the paper discusses the implications of the results for policy and practice. It ends with a conclusion and some suggestions for further research.

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Leu	Phe	Arg	Thr	Glu	Leu	Cys	Phe	Leu	Ser	Ala	Thr	Glu	Glu	Pro	Ser	
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Glu	Ser	Lys	Val	Val	Val	Arg	Ser	Leu	Asp	Ala	Gly	Ser	Asp	Lys	Pro	
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Val	Pro	Phe	Ala	Ser	Met	Ala	Asp	Glu	Met	Asn	Pro	Ala	Leu	Gly	Val	
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cac ctg gac ttt gtt tcc atc ggt acc aac gac ctg acc cag tac acc	1267
His Leu Asp Phe Val Ser Ile Gly Thr Asn Asp Leu Thr Gln Tyr Thr	375 380 385 390
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Met Ala Ala Asp Arg Met Ser Pro Glu Leu Ala Tyr Leu Thr Asp Pro	395 400 405
tgg cag cca gca gtc ctg cgc ctg atc aag cac acc tgt gac gaa ggt	1363
Trp Gln Pro Ala Val Leu Arg Leu Ile Lys His Thr Cys Asp Glu Gly	410 415 420
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Ala Arg Phe Asn Thr Pro Val Gly Val Cys Gly Glu Ala Ala Ala Asp	425 430 435
cca ctg ttg gca act gtc ctc acc ggt ctt ggc gtg aac tcc ctg tcc	1459
Pro Leu Leu Ala Thr Val Leu Thr Gly Leu Gly Val Asn Ser Leu Ser	440 445 450
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<212> PRT
<213> Corynebacterium glutamicum
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INDEPENDENT

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Ala	Tyr	Leu	Thr	Asp	Pro	Trp	Gln	Pro	Ala	Val	Leu	Arg	Leu	Ile	Lys
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His	Thr	Cys	Asp	Glu	Gly	Ala	Arg	Phe	Asn	Thr	Pro	Val	Gly	Val	Cys
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tct gca gcc aag gtg gaa ggt gct ggc ggg ctc atc ttg ttg ctc atc 580

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290

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Pro Leu Leu Tyr Pro Phe Leu Val Pro Leu Gly Leu His Trp Pro Leu
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Asn Ala Ile Met Ile Gln Asn Ile Asn Thr Leu Gly Tyr Asp Phe Ile
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Gln Gly Pro Met Gly Ala Trp Asn Phe Ala Cys Phe Gly Leu Val Thr
345 350 355

Gly Val Phe Leu Leu Ser Ile Lys Glu Arg Asn Lys Ala Met Arg Gln
360 365 370

Val Ser Leu Gly Gly Met Leu Ala Gly Leu Leu Gly Gly Ile Ser Glu
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Pro Ser Leu Tyr Gly Val Leu Leu Arg Phe Lys Lys Thr Tyr Phe Arg
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Leu Leu Pro Gly Cys Leu Ala Ala
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<213> Corynebacterium glutamicum

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Arg Phe Gln Val Lys Asp Gln Ser Ile Val Asp Gln Gln Glu Ile Asp
35 40 45

Ser Asp Pro Ser Val Leu Gly Val Val Pro Gln Gly Ser Thr Gly Met
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Gln 65	Val	Val	Met	Gly	Gly 70	Ser	Val	Ala	Asn	Tyr 75	Tyr	Gln	Glu	Ile	Leu 80
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Ser	Ser	Lys	Lys 100	Glu	Tyr	Gly	Gly	Val 105	Arg	Gly	Lys	Tyr	Ser 110	Trp	Ile
Asp	Tyr	Ala 115	Phe	Glu	Phe	Leu	Ser 120	Asp	Thr	Phe	Arg	Pro 125	Ile	Leu	Trp
Ala 130	Leu	Leu	Gly	Ala	Ser	Leu 135	Ile	Ile	Thr	Leu	Leu 140	Val	Leu	Ala	Asp
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Thr	Tyr	Val	Phe	Leu 165	His	Ser	Met	Trp	Arg 170	Ser	Val	Phe	Tyr	Phe 175	Leu
Pro	Ile	Met	Val 180	Gly	Ala	Thr	Ala	Ala 185	Arg	Lys	Leu	Gly	Ala 190	Asn	Glu
Trp	Ile	Gly 195	Ala	Ala	Ile	Pro	Ala 200	Ala	Leu	Leu	Thr	Pro 205	Glu	Phe	Leu
Ala 210	Leu	Gly	Ser	Ala	Gly	Asp 215	Thr	Val	Thr	Val	Phe 220	Gly	Leu	Pro	Met
Val 225	Leu	Asn	Asp	Tyr	Ser 230	Gly	Gln	Val	Phe	Pro 235	Pro	Leu	Ile	Ala	Ala 240
Ile	Gly	Leu	Tyr	Trp 245	Val	Glu	Lys	Gly	Leu 250	Lys	Lys	Ile	Ile	Pro 255	Glu
Ala	Val	Gln	Met 260	Val	Phe	Val	Pro	Phe 265	Phe	Ser	Leu	Leu	Ile 270	Met	Ile
Pro	Ala	Thr 275	Ala	Phe	Leu	Leu	Gly 280	Pro	Phe	Gly	Ile	Gly 285	Val	Gly	Asn
Gly 290	Ile	Ser	Asn	Leu	Leu	Glu 295	Ala	Ile	Asn	Asn	Phe 300	Ser	Pro	Phe	Ile
Leu 305	Ser	Ile	Val	Ile	Pro 310	Leu	Leu	Tyr	Pro	Phe 315	Leu	Val	Pro	Leu	Gly 320
Leu	His	Trp	Pro	Leu 325	Asn	Ala	Ile	Met	Ile 330	Gln	Asn	Ile	Asn	Thr 335	Leu
Gly	Tyr	Asp	Phe 340	Ile	Gln	Gly	Pro	Met 345	Gly	Ala	Trp	Asn	Phe 350	Ala	Cys
Phe	Gly	Leu 355	Val	Thr	Gly	Val	Phe 360	Leu	Leu	Ser	Ile	Lys 365	Glu	Arg	Asn
Lys 370	Ala	Met	Arg	Gln	Val	Ser 375	Leu	Gly	Gly	Met	Leu 380	Ala	Gly	Leu	Leu
Gly	Gly	Ile	Ser	Glu	Pro	Ser	Leu	Tyr	Gly	Val	Leu	Leu	Arg	Phe	Lys

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Leu	Val	Gln	Lys	Ser	Gly	His	Ala	Val	Ala	Leu	Arg	Leu	Asp	Ser	Gly				
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Val	Glu	Ile	Leu	Val	His	Val	Gly	Leu	Asp	Thr	Val	Gln	Leu	Gly	Gly				
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Glu	Gly	Phe	Thr	Val	His	Val	Glu	Arg	Arg	Gln	Gln	Val	Lys	Ala	Gly				
			65							70				75					
Asp	Pro	Leu	Ile	Thr	Phe	Asp	Ala	Asp	Phe	Ile	Arg	Ser	Lys	Asp	Leu				
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Pro	Leu	Ile	Thr	Pro	Val	Val	Val	Ser	Asn	Ala	Ala	Lys	Phe	Gly	Glu				
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Ile	Glu	Gly	Ile	Pro	Ala	Asp	Gln	Ala	Asn	Ser	Ser	Thr	Thr	Val	Ile				
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Lys	Val	Asn	Gly	Lys	Asn	Glu													
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